Advan BASIC

Advan BASIC is a new, fast, powerful, easy to use BASIC for ATARI 800XL/XE and 48K 400/800 computers. At only $39.95 it gives ATARI programmers a high quality BASIC at an excellent price:

"spectacular...never has a language given the programmer such an effortless command of the special sound and graphics capabilities of the ATARI...an expanded BASIC with powerful new commands....feels just like ATARI BASIC...very convenient, very neat, very fast...brilliant work...send away for your copy today. You will not regret it." April '86 ANTIC

"great...using the package is effortless...over and above ATARI BASIC commands...is a vast array of new goodies, which will make life easier for the programmer in any application...allows the BASIC programmer to write elegant, structured, comfortable, readable programs...the nicest interface between assembly and BASIC that I've ever seen...I heartily recommend the package on the strength of Advan BASIC..." August '86 ANALOG

Fast

Advan BASIC runs short programs up to 20 times faster than ATARI BASIC. Long programs run up to 100 times faster. For example, consider the following program:

```
100 For A=1 TO 30000
110   S=S+1
120 NEXT A: ?S
```

ATARI BASIC runs this program in 161 sec. Of course, very few programs are this short. You can simulate a medium length program with a FOR loop at its end by putting 100 REM statements at the beginning of the above program; ATARI BASIC now requires 373 sec. Advan BASIC takes about 32 sec with or without the REM statements. If you use integers Advan takes about 15 sec, and only 10 sec with the display off (Advan BASIC has special commands to turn the display on and off). If you want even more speed the optional Optimizing Compiler (described below) can run the lengthened version of the program in less than 1 sec, a full 450 times faster than ATARI BASIC.

Easy to use

Compiled languages normally run programs faster than interpreters but are usually much harder to use. Although Advan BASIC compiles programs, it is still quite easy to use. Programs are entered and edited the same way as ATARI BASIC. Each program line is checked for errors as it is entered. Error messages, however, are in English so you don't need to look up the meaning of error numbers. The RUN command first quickly compiles and then executes your programs (for long programs there is a disk compile option). If there is an error during program execution, the system returns you to the BASIC and displays the error and line number on which it occurred. In many cases the line itself is listed up to the point at which the error occurred. In most ways using Advan BASIC is like using ATARI BASIC except that your programs run much faster.

General Information

* Advan BASIC is on a disk and loads in about 35 seconds. Normally you don't need to reload the BASIC after compiling or executing a program.
* Included in the package are a 119 page tutorial and reference manual, a master disk, and a backup disk.
* Advan runs about the same size programs as ATARI BASIC.
* Programs written in ATARI BASIC cannot be directly loaded and run by Advan. Included with Advan BASIC is a program which will convert many ATARI BASIC programs you have written to Advan form. There are a number of programs, however, which will need some degree of modification before they can be converted, and some will need to be rewritten.
* To use Advan BASIC you need one disk drive and an 800XL/XE or a 48K 400/800 computer. With 400/800 computers, however, you need to spend about 15 to 20 seconds reloading part of the BASIC after executing large programs or those using graphics.

OPTIONAL PACKAGES

Advan Language Designs offers three packages designed to help you get the most out of Advan BASIC:

Utility Programs Package

Included are programs which will:
(1) Format disks and place the BASIC execution module on them. This lets you sell or give programs you have written to someone who does not have Advan BASIC.
(2) List the program variables in alphabetical order and for each variable the line numbers where it occurred--Useful in debugging and in modifying programs.
(3) Renumber the lines of a specified program.

This package also includes named subroutines which you can append to your programs. They are at negative line numbers so they won't interfere with your program. They provide commands to:
(1) Input or read data to a matrix (i.e., two dimensional array), print a matrix, add, subtract, and multiply matrices, calculate the determinant of a matrix, and find the inverse and transpose of a matrix.
(2) Convert a number from one base to another, such as from hexadecimal to decimal and vice versa.
(3) Print a disk directory; delete, lock, unlock, and rename files.

Screen Design Package

Lets you design graphics displays using one of the standard graphics modes or a custom mode. With a custom mode you can mix several graphics modes in one display, and even specify horizontal and vertical fine scrolling. Special commands let you draw lines, circles, ellipses, and circular arcs, design alternate character sets, fill in figures, reproduce a screen figure at another location, and set the color registers. After designing a display you can save it to a disk. Special commands in Advan BASIC make it easy for you, in your program, to load the display, plot to it, and fine scroll it.

Unlike ATARI BASIC the commands DIR, KILL, RENAME, LOCK, and UNLOCK are built into Advan and can be used without harming a program in memory. No more going back and forth between DOS and BASIC. A DEL command lets you delete groups of program lines. Owners of 130XE and 256K XL's which are compatible with the 130XE can use the RAMDISK option included with Advan BASIC.

Powerful

Advan BASIC has many more features, commands, and built-in functions than ATARI BASIC. While some of the other BASICs available for ATARI 8 bit computers also have more than ATARI BASIC, they are interpreters and so their programs generally run slower than Advan. Moreover, programs developed with these interpretive BASICs using their extra commands can only be run by owners of the same BASIC. Using the special formatting program on the optional Utility Programs package (see below), you can give or sell your Advan programs to users who don't own Advan BASIC.

Following is a description of some, but by no means all, of the special features of Advan BASIC:

* Advan has string arrays. Furthermore, you don't have the chore of dimensioning strings. The string functions LEFT, RIGHT, MID, INSTR, STR$, VAL and others are available. Moreover there is an add command for strings (ie, A$=B$+C$+D$).
* Integers as well as real variables and numbers are available. Integers and real can be mixed in an expression. Speed and space are the reasons to use integers. Calculations are 3 or more times faster, and integers need only 1/3 as much memory as real numbers, which is important for large arrays.
* Integer, real, and string arrays can have up to 64 dimensions.
* Special commands let you use player missiles without having to use POKEs or machine code. You can set up a player and specify its color and its vertical and horizontal position. You can even set a vertical and/or a horizontal speed and also change the figure displayed at specified intervals, which allows player-missile movement and animation without machine code. Once you have specified the speeds and intervals, the program can do other things while the system automatically moves and/or changes the player-missile.
* Advan has IF THEN ELSE and even a multi-line IF DO ELSE ENDIF.
* There are PRINT USING and LPRINT USING commands to simplify printing data.
* Structured programming is supported by Advan BASIC. There are WHILE WEND and REPEAT UNTIL loops, a CASE command, and named subroutines with up to four arguments. Also program lines can be indented for readability.
* Advan has real, integer, and string functions with up to four arguments.
* There are commands to use the ATARI displaylist interrupt capability.
* Special commands let you set up a tune and have the system automatically play it without further commands from the program.
* There is a built-in assembler. Mnemonics can be used for 6502 commands and line numbers for the destination of jumps and branches. Furthermore, you can directly access and use BASIC variables in the assembly code.

Optimizing Compiler

The compiler in Advan BASIC produces fast compact code, but even more speed is needed for some programs. The Optimizing Compiler uses two special commands, FAST and FAST END, which are built into Advan BASIC. The sections of the program placed between these commands are typically speeded up 2 to 6 times faster than they would be in Advan BASIC. Special high speed routines can be used for add, subtract, multiply, sin, cos, tan, atan, log, exp, and ^. However, the length of these speeded up sections is also increased. The Optimizing Compiler compensates for this by reducing the length of the remaining code. In many programs about 10 percent of the length is critical to the speed, so even if only this portion is speeded up, the program will execute much faster. Since the 90 percent not speeded up will have its length reduced by about 20%, the overall program length will remain about the same.

"...fastest BASIC in ATARI history. In our Sieve Benchmark, the Advan Optimizing Compiler is about four times faster than the MMG Compiler, ... 20 times faster than compiled TURBO-BASIC XL and 120 times faster than uncompiled ATARI BASIC." June 87 ANTIC

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Item		Qty	Amount
Advan BASIC	$39.95	____	$_____
Utility Programs Package	$29.95	____	_____
Screen Design Package	$29.95	____	_____
Optimizing Compiler	$24.95	____	_____
Advan BASIC plus Utility Programs, Screen Design, and Optimizing Compiler	$99.95	____	_____

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